

VERIFICATION OF SMOKING HISTORY IN PATIENTS AFTER INFARCTION USING URINARY NICOTINE AND COTININE MEASUREMENTS

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PURPOSE: SINCE PATIENTS MAY NOT ALWAYS BE TRUTHFUL IN DECLARING THEIR CURRENT SMOKING HABITS, "THE REAL VALUE OF STOPPING SMOKING MAY BE UNDERESTIMATED." SOME OF THE CURRENT METHODS FOR VALIDATING PATIENTS' SMOKING HABITS, SUCH AS DETERMINATIONS OF BLOOD THIOCYANATE OR CARBOXYHEMOGLOBIN CONCENTRATIONS, "HAVE PROVED TO BE NOT SUFFICIENTLY DISCRIMINATING, AND URINARY NICOTINE MEASUREMENTS HAVE BEEN SUGGESTED AS PROVIDING A MORE ACCURATE ASSESSMENT,... THE AMOUNT OF UNCHANGED NICOTINE EXCRETED, HOWEVER, IS SMALL, MOST OF THE EXCRETION BEING IN THE FORM OF ITS MAJOR METABOLITE COTININE. AFTER SMOKING THE PEAK URINARY COTININE EXCRETION OCCURS AT ABOUT TWO HOURS AND ITS CLEARANCE IS SLOW."

THIS STUDY INVESTIGATES THE VALUE OF MEASURING BOTH URINARY NICOTINE AND COTININE CONCENTRATIONS AS AN INDEX OF CURRENT SMOKING AND USES THESE MEASUREMENTS TO VERIFY THE SMOKING HISTORIES GIVEN BY PATIENTS ATTENDING A POSTINFARCTION CLINIC.

METHODS: URINARY NICOTINE AND COTININE WERE MEASURED IN 46 NONSMOKERS AND 58 SMOKERS WHOSE SMOKING HISTORIES WERE CONSIDERED TO BE RELIABLE IN ORDER TO VALIDATE THE METHOD, IN 13 SMOKERS WHO CONTINUED TO SMOKE FOR 24 HR AND THEN ABSTAINED FOR 36 HR IN ORDER TO INVESTIGATE TIME PATTERNS OF EXCRETION, AND IN 85 POSTINFARCTION PATIENTS WHO WERE SMOKERS UP TO THE TIME OF ILLNESS. PATIENT LEVELS WERE THEN COMPARED WITH CURRENT SELF-REPORTED SMOKING HABITS.

FINDINGS: IN THE NONSMOKERS, DETECTABLE CONCENTRATIONS OF NICOTINE AND COTININE WERE ALWAYS BELOW THE CONFIDENCE LIMITS SET FOR THE METHOD, WHILE IN SMOKERS THE CONCENTRATIONS WERE ALWAYS ABOVE THESE

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LIMITS. COTININE WAS DETECTABLE IN THE URINE FOR LONGER PERIODS (UP TO 36 HR) THAN NICOTINE AFTER SUBJECTS STOPPED SMOKING.

WHEN THE METHOD WAS USED TO VERIFY THE SMOKING HISTORIES GIVEN BY THE PATIENTS, IT WAS ESTIMATED THAT 46-53% OF PREVIOUS SMOKERS HAD ACTUALLY STOPPED SMOKING COMPARED WITH THE 63% WHO SAID THEY HAD STOPPED.

DISCUSSION: "[S]IMULTANEOUS ASSAYS OF URINARY NICOTINE AND COTININE COULD BE A USEFUL INDEX OF CURRENT SMOKING HABITS.... [T]HE SLOWER DISAPPEARANCE OF COTININE FROM URINE WILL FACILITATE IDENTIFYING SMOKERS WHO ATTEMPT TO CONCEAL THEIR HABIT BY ABSTAINING FROM SMOKING ON THE DAY OF THEIR CLINIC VISIT."

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CLINICAL STUDY, BEHAVIOR STUDY, METHODOLOGY STUDY, THOUSAND, CIGARETTE SMOKING, NONSMOKERS, METHODOLOGY VALIDITY, SMOKING HABITS VALIDITY, SMOKING DISCONTINUATION, URINARY NICOTINE CONTENT, URINARY COTININE CONTENT, NICOTINE DETECTION, SMOKING HISTORY VALIDITY, URINARY NICOTINE SMOKING ASSOC, URINARY COTININE SMOKING ASSOC, URINARY METABOLITES, DATA VALIDITY, SELF REPORT TECHNIQUES, METHODOLOGY ANALYSIS, URINARY EXCRETION, SMOKING HABITS CHANGES, NICOTINE EXCRETION, COTININE EXCRETION, EXSMOKERS/
URINARY NICOTINE PASSIVE SMOKING CAUSATION 1, DATA COMPARABILITY, NICOTINE METABOLISM, HEALTH HAZARDS SMOKING CAUSATION 1, BLOOD THIOCYANATE CONTENT, CHEMICAL HALF LIFE, BLOOD CARBON MONOXIDE SMOKING CAUSATION 1, NICOTINE ABSORPTION, SMOKING ABSTINENCE, SMOKING REDUCTION, SMOKING AMOUNT DECREASE, SMOKING DISCONTINUATION DURATION, TIME FACTORS, SMOKING CONTINUATION, SMOKING HABITS HI, SMOKING HISTORY HI, ANTISMOKING MEDICAL ADVICE,

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BLOOD CARBON MONOXIDE PASSIVE SMOKING CAUSATION 1, BLOOD CARBON MONOXIDE AIR POLLUTION CAUSATION 1, BLOOD CARBON MONOXIDE MULTIPLE FACTORS CAUSATION 1, BLOOD CARBON MONOXIDE ENVIRONMENTAL FACTORS CAUSATION 1, CIGARETTE SMOKE EXPOSURE, PASSIVE SMOKING HEMATOLOGICAL EFFECTS, SMOKING DISCONTINUATION HEALTH EFFECTS, ENVIRONMENTAL POLLUTION, COTININE METABOLISM, CIGARETTE BRANDS, CIGARETTE SMOKE NICOTINE CONTENT, SELF REPORT TECHNIQUES HI, BLOOD THIOCYANATE SMOKING CAUSATION 1, HEALTH HAZARDS DECREASE SMOKING DISCONTINUATION CAUSATION 1, SMOKING DISCONTINUATION HEALTH ASSOC, SMOKING DISCONTINUATION SMOKING AMOUNT NONASSOC, SMOKING HEMATOLOGICAL EFFECTS, MYOCARDIAL INFARCTION SMOKING ASSOC, MYOCARDIAL INFARCTION RISK FACTORS/
STATISTICAL ANALYSIS, STATISTICAL SIGNIFICANCE, GAS LIQUID CHROMATOGRAPHY, CREATININE EXCRETION, CORRELATION COEFFICIENTS, URINE SAMPLE, URINALYSIS, DRUG THERAPY, THRESHOLD VALUE, NITROGEN/
ENGLISH LANGUAGE, NOTTINGHAM RESIDENCE, UK RESIDENCE, MYOCARDIAL INFARCTION PATIENTS, VOLUNTEERS, CLINICAL PATIENTS

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